children who were going to do poorly with SV palliation and changing their strategy toward transplantation. We often persist in our SV strategy until a patient is so ill that even VAD support cannot resuscitate him or her. The authors’ improved results with SV palliation is because they moved to VAD support early—before the children were on extracorporeal membrane oxygenation. In all but 2 patients, the surgeons avoided the common scenario of failed neonatal palliation resulting in extracorporeal membrane oxygenation and then VAD support and salvage VAD, the results of which are dismal: <20% survival. This series is an important report for our field because it is the first to describe elective VAD therapy as a bridge to transplant in a series of SV patients before any palliation using the Excor device. Despite size, device, or diagnosis, good patient selection and timing of support can result in acceptable results even in infants with SV physiology.

This study is limited by its small sample size and further study is needed, especially because multiple reports have demonstrated that support of neonates/infants with SV physiology has been improving with the use of paracorporeal continuous flow devices. However, there may be advantages to pulsatility in this cohort. This series is a promising step to improving survival in this high-risk patient population, begging the question: Have we again found promise with pulsatility?

References
2. Conway J, St Louis J, Morales DLS, Law S, Tjossem C, Humpel T. Delineating survival outcomes in children <10 kg bridged to transplant or recovery with the Berlin Heart EXCOR ventricular assist device. JACC Heart Fail. 2015;3:70-7.
support for single ventricle (SV), depending on the stages of SV palliations; 6-month survival was 30% for Stage I, 40% for Stage II, and 95% for Stage III. Although poor outcomes for Stage I and II are likely multifactorial, the unique physiology specific to Stage II predominantly responsible for unfavorable outcomes has been recognized (ie, dichotomous systemic venous return\(^1\)). Such recognition has led to VAD implant procedure modifications and ongoing outcome improvement.\(^3,4\) In contrast, VAD support for Stage I remains a serious challenge.\(^5\) Exceedingly poor outcomes are primarily attributed to critical status at VAD implant, as evidenced by substantially greater proportion (59%) in INTERMACS (Interagency Registry for Mechanically Assisted Circulatory Support) profile 1, compared with 29% for Stage II, and 21% for Stage III.\(^1\) In other words, the most tenuous patients (neonates/infants with SV physiology) received VAD support at the most suboptimal timing (critical cardiogenic shock). While the “salvage” nature of VAD support for Stage I is the major reason for poor outcomes, it could represent, in turn, the potential moving target to alter the dismal outlook of VAD support for this challenging cohort.

In this issue of the *Journal, Philip and colleagues*\(^6\) enlighten us on the new strategy of VAD use for Stage I. Their series included 6 patients with hypoplastic left heart syndrome, 2 with pulmonary atresia with intact ventricular septum, and 1 with double-inlet left ventricle. Of note, 6 (67%) of the 9 patients were bridged to cardiac transplant using the EXCOR VAD (Berlin Heart, Inc, The Woodlands, Tex), with a median (range) support duration of 64 (11-167) days. The novelty of their strategy is to use VAD support not as “salvage” following failed Stage I palliation. Rather, the VAD implantation was performed as an index procedure in 5 (56%) of the 9 patients. As has been witnessed over the last decade, earlier initiation of VAD support and avoidance of INTERMACS 1 profile is critical for outcome improvement.\(^7\) In this regard, Gainesville’s strategy is consistent with the overall trend in the VAD society (ie, earlier deployment for better outcome). Needless to say, such strategic changes in the most tenuous patients is not without courage. The Gainesville team was brave enough to explore the endeavor, which would reflect their confidence in their clinical capability in VAD management. Although their preliminary experience is encouraging and certainly more favorable than the historical data, the support strategy’s sophistication would lead to further outcome improvement. Given the current lack of realistic support solutions in this challenging population, nonetheless, their successful experience represents a ray of light in the complete darkness that exists in the field of pediatric VAD support. Philip and colleagues’ report will be remembered as a landmark article that facilitated the establishment of Stage I support strategies, which would ultimately usher in an era of VAD support for the entire spectrum of SV population.

**References**